

10/534695

JC20 Rec'd PCT/PTO 13 MAY 2005

Docket No.: 1592-0155PUS1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Masashi NAKAMURA et al.

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: May 13, 2005

Art Unit: N/A

For: **EPITAXIAL GROWTH METHOD AND  
SUBSTRATE FOR EPITAXIAL GROWTH**

Examiner: Not Yet Assigned

**LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34)) during prosecution of the above-identified national phase PCT application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

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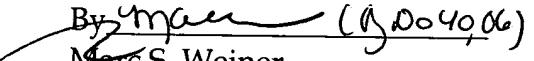
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Dated: May 13, 2005  
MSW/nl

Respectfully submitted,

  
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Attachment(s)

## CLAIMS

1. An epitaxial growth method comprising: supporting a substrate for growth with a substrate supporter, forming a compound semiconductor layer comprising 3 or 4 elements on the substrate for growth by metal organic chemical vapor deposition, polishing the substrate so that an angle of gradient is  $0.00^\circ$  to  $0.03^\circ$  or  $0.04^\circ$  to  $0.24^\circ$  with respect to (100) direction in an entire effective area of the substrate, and forming the compound semiconductor layer to be  $0.5\mu\text{m}$  thick or more on the substrate by using the substrate for growth.
2. The epitaxial growth method as claimed in claim 1, further comprising: forming a buffer layer on the substrate for growth, and forming the compound semiconductor layer on the buffer layer.
3. The epitaxial growth method as claimed in claim 1 or 2, wherein the compound semiconductor layer is a III-V group compound semiconductor layer containing at least As.
4. The epitaxial growth method as claimed in claim 3, wherein the compound semiconductor layer is an InGaAs layer or an InAlAs layer.

5. The epitaxial growth method as claimed in claim 3 or 4, wherein the substrate for growth is a semiconductor crystal substrate having dislocation density of  $5000\text{cm}^{-2}$  or less.

6. The epitaxial growth method as claimed in claim 5, wherein the substrate for growth is an InP substrate.

7. A substrate for epitaxial growth used for an epitaxial growth method in which a compound semiconductor layer comprising 3 or 4 elements is formed on the substrate for growth by metal organic chemical vapor deposition, wherein an angle of gradient is  $0.00^\circ$  to  $0.03^\circ$  or  $0.04^\circ$  to  $0.24^\circ$  with respect to (100) direction in an entire effective area of the substrate.

8. The substrate for epitaxial growth as claimed in claim 7, wherein the substrate is a semiconductor crystal substrate having dislocation density of  $5000\text{cm}^{-2}$  or less.

9. The substrate for epitaxial growth as claimed in claim 7 or 8, wherein the substrate is an InP substrate.